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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,114	03/28/2001	Ching-Wei Chang	SLA.0390	2326
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ROBERT D. VARITZ 4915 S.E. 33RD PLACE PORTLAND, OR 97202			EXAMINER THOMPSON, JAMES A	
			ART UNIT	PAPER NUMBER
			2624	

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,114

Applicant(s)

CHANG, CHING-WEI

Examiner

James A. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 September 2005 has been entered.

Response to Arguments

2. Applicant's arguments, see page 8, lines 2-7, filed 29 September 2005, with respect to the abstract have been fully considered and are persuasive. The legal claim language present in the abstract, and the fact that the abstract was not in narrative form, was clearly set forth by Examiner both on page 2, lines 6-17 of the previous office action, dated 14 June 2005 and mailed 29 June 2005, and in the impromptu telephone conversation of 13 September 2005, initiated by Applicant's representative. However, since Applicant has amended the abstract to place the abstract in narrative form, the objection to the abstract listed in item 2 of said previous office action has been withdrawn.

3. Applicant's arguments filed 29 September 2005 have been fully considered but they are not persuasive.

Regarding page 8, lines 8-13: Firstly, while Examiner believes that the remarks presented on page 2, lines 18-22 of

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said previous office action, along with the fact that prior art rejections later followed, were sufficient, Examiner nonetheless apologizes if the brevity of said remarks led to any confusion.

Regarding page 8, line 19 to page 11, line 2: Examiner appreciates the detailed explanation of the invention and fully considers the remarks contained in this section of Applicant's arguments. At the same time, Applicant is respectfully advised that, as per Office practice, the claim limitations are given their broadest reasonable interpretation consistent with the specification (see MPEP §2111) and the limitations from the specification are not read into the claims (see *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)). The specific limitations present in the claims have been rejected based on prior art, as is set forth in detail below.

Regarding page 11, line 3 to page 14, line 3: Examiner agrees with Applicant that the presently amended claims are not fully taught by the prior art references thus far applied in the prior art rejections of the claims, as set forth in said previous office action. However, additional prior art has been discovered which does fully teach the present claims. The prior art rejections based on the newly discovered prior art are given in detail below.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanyu (US Patent 5,812,742) in view of Sano (US Patent 6,072,590).

Regarding claim 1: Hanyu discloses selecting an image which has been halftoned by forming original halftone dots (figure 5A and column 8, lines 25-29 of Hanyu), wherein each halftone dot includes at least one pixel therefor (column 7, lines 46-49 and column 8, lines 29-34 of Hanyu); determining a number of tone levels required for each pixel of the selected halftoned image (column 9, lines 36-41 and lines 51-57 of Hanyu); organizing the number of tone levels (figures 6A-6D and column 9, lines 17-35 of Hanyu); and identifying a high frequency halftone cell size (column 9, lines 20-34 of Hanyu). By organizing the dots for the second halftone operation into 1x1, 2x2, 2x4, 3x3 or 3x6 cells, the high-frequency halftone cell size is identified. The high-frequency halftone cell size is the cell size specifically selected based on the desired magnification.

Hanyu further discloses scanning the selected halftoned image (column 7, lines 30-35 and column 11, lines 24-30 of Hanyu) to produce a second generation halftoned image, which retains the original halftone dots and pixels therein (figure 12 (8) and column 9, lines 51-67 of Hanyu). Reading the image with a fax machine to produce the initial two-toned (also know as halftoned) image requires scanning the image. The original

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halftone image is used to produce a second generation halftoned image in the system receiving the scanned halftoned image (figure 12(8) and column 9, lines 51-67 of Hanyu).

Hanyu further discloses reproducing, for each pixel in the second generation halftoned image, a pixel tone level (column 9, lines 60-67 of Hanyu); and selecting, from the set of tone levels, a tone closest to the pixel tone level of each pixel in the second generation halftoned image to minimize noise (column 9, lines 60-67 of Hanyu).

Hanyu does not disclose expressly arranging the number of tone levels in a set of tone levels; that said selection of a tone is performed such that the noise generated during scanning is minimized and without constructing a new halftone center; and arranging a dot growth pattern evenly across the second generation image.

Sano discloses arranging the number of tone levels in a set of tone levels (figure 9 and column 5, lines 29-36 of Sano); selecting a tone such that the noise generated during scanning is minimized (figure 14 and column 8, lines 4-8 of Sano) and without constructing a new halftone center (column 7, line 60 to column 8, line 4 of Sano); and a dot growth pattern evenly across the second generation image (figure 14(HC0-HC4) and column 7, line 60 to column 8, line 4 of Sano).

Hanyu is analogous art since Hanyu is from the same field of endeavor as the present application, namely converting halftone data to multi-tone data without descreening. Hanyu and Sano are combinable because they are from the same field of endeavor, namely halftone processing of image data so as to minimize halftone processing artifacts. At the time of the invention, it would have been obvious to a person of ordinary

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skill in the art to use the halftone screen production and threshold selection processing taught by Sano to produce the halftone screen used for multi-tone image production in the system taught by Hanyu. The motivation for doing so would have been eliminate unevenness in the resultant multi-tone image (column 2, lines 20-22 of Sano). Therefore, it would have been obvious to combine Sano with Hanyu to obtain the invention as specified in claim 1.

6. Claims 2-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanyu (US Patent 5,812,742) in view of Sano (US Patent 6,072,590) and Karlsson (US Patent 5,777,757).

Regarding claims 2-3: Hanyu in view of Sano does not disclose expressly determining a sub-pixel level difference; and that growing the dot pattern includes growing the dot pattern evenly across the second generation image by setting the sub-pixel level difference to one.

Karlsson discloses determining a sub-pixel level difference (figure 5 and column 5, line 60 to column 6, line 1 of Karlsson); and growing the dot pattern evenly across the image by setting the sub-pixel level difference to one (figure 5; column 6, lines 5-11; and column 8, lines 52-62 of Karlsson). Karlsson teaches that the supercell array (figure 5(500) of Karlsson) can be configured in any desired manner and the order of growth can occur in any desired progression of stages (column 8, lines 52-62 of Karlsson). In the example of figure 5 of Karlsson, the order of growth progresses such that, in the left column, each sub-pixel is increased by one grayscale value until all the sub-pixels in the left column are the same value (column 5, line 63 to column 6, line 4 of Karlsson). Then, after all

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the sub-pixels of the left column have attained the same color, the growth progression repeats, but with the next grayscale level (column 6, lines 5-11 of Karlsson). Therefore, the sub-pixel level difference has been set to one. Since figures 5-7 of Karlsson are merely exemplary and any configuration and pixel growth can be defined (column 8, lines 52-62 of Karlsson), it would be obvious to one of ordinary skill in the art to apply the growth pattern of the left column of the supercell to the entire supercell. In other words, the progression would occur such that every sub-pixel in the supercell is the same grayscale value before a sub-pixel is set to the next grayscale value.

Hanyu in view of Sano is combinable with Karlsson because they are from the same field of endeavor, namely halftone data image processing and halftone screen production. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the dot growth pattern taught by Karlsson to the second-generation halftone method taught by Hanyu in view of Sano. The motivation for doing so would have been to reduce image artifacts (column 3, lines 12-16 of Karlsson). Therefore, it would have been obvious to combine Karlsson with Hanyu in view of Sano to obtain the invention as specified in claims 2-3.

Regarding claim 8: Hanyu discloses selecting an image which has been halftoned by forming original halftone dots (figure 5A and column 8, lines 25-29 of Hanyu), wherein each halftone dot includes at least one pixel therefor (column 7, lines 46-49 and column 8, lines 29-34 of Hanyu); determining a number of tone levels required for each pixel of the selected halftoned image (column 9, lines 36-41 and lines 51-57 of Hanyu); organizing the number of tone levels (figures 6A-6D and

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column 9, lines 17-35 of Hanyu); and identifying a high frequency halftone cell size (column 9, lines 20-34 of Hanyu). By organizing the dots for the second halftone operation into 1x1, 2x2, 2x4, 3x3 or 3x6 cells, the high-frequency halftone cell size is identified. The high-frequency halftone cell size is the cell size specifically selected based on the desired magnification.

Hanyu further discloses scanning the selected halftoned image (column 7, lines 30-35 and column 11, lines 24-30 of Hanyu) to produce a second generation halftoned image, which retains the original halftone dots and pixels therein (figure 12 (8) and column 9, lines 51-67 of Hanyu). Reading the image with a fax machine to produce the initial two-toned (also know as halftoned) image requires scanning the image. The original halftone image is used to produce a second generation halftoned image in the system receiving the scanned halftoned image (figure 12(8) and column 9, lines 51-67 of Hanyu).

Hanyu further discloses reproducing, for each pixel in the second generation halftoned image, a pixel tone level (column 9, lines 60-67 of Hanyu); and selecting, from the set of tone levels, a tone closest to the pixel tone level of each pixel in the second generation halftoned image to minimize noise (column 9, lines 60-67 of Hanyu).

Hanyu does not disclose expressly arranging the number of tone levels in a set of tone levels; that said selection of a tone level is performed such that the noise generated during scanning is minimized and without constructing a new halftone center; arranging a dot growth pattern to offset initial dot growth from the center of the halftone cell by defining sub-cells and growing the dot pattern relative to the sub-cell;

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determining a sub-pixel level difference; and growing a dot pattern evenly across the second generation by setting the sub-pixel level difference to one while preserving dot original amplitude.

Sano discloses arranging the number of tone levels in a set of tone levels (figure 9 and column 5, lines 29-36 of Sano); selecting a tone such that the noise generated during scanning is minimized (figure 14 and column 8, lines 4-8 of Sano) and without constructing a new halftone center (column 7, line 60 to column 8, line 4 of Sano); and arranging a dot growth pattern to offset initial dot growth from the center of the halftone cell by defining sub-cells (figure 14(HC0-HC4) of Sano) and growing the dot pattern relative to the sub-cell (column 7, line 60 to column 8, line 4 of Sano).

Hanyu is analogous art since Hanyu is from the same field of endeavor as the present application, namely converting halftone data to multi-tone data without descreening. Hanyu and Sano are combinable because they are from the same field of endeavor, namely halftone processing of image data so as to minimize halftone processing artifacts. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the halftone screen production and threshold selection processing taught by Sano to produce the halftone screen used for multi-tone image production in the system taught by Hanyu. The motivation for doing so would have been eliminate unevenness in the resultant multi-tone image (column 2, lines 20-22 of Sano). Therefore, it would have been obvious to combine Sano with Hanyu.

Hanyu in view of Sano does not disclose expressly determining a sub-pixel level difference; and growing a dot

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pattern evenly across the second generation by setting the sub-pixel level difference to one while preserving dot original amplitude.

Karlsson discloses determining a sub-pixel level difference (figure 5 and column 5, line 60 to column 6, line 1 of Karlsson); and growing the dot pattern evenly across the image by setting the sub-pixel level difference to one while preserving dot original amplitude (figure 5; column 6, lines 5-11; and column 8, lines 52-62 of Karlsson). Karlsson teaches that the supercell array (figure 5(500) of Karlsson) can be configured in any desired manner and the order of growth can occur in any desired progression of stages (column 8, lines 52-62 of Karlsson). In the example of figure 5 of Karlsson, the order of growth progresses such that, in the left column, each sub-pixel is increased by one grayscale value until all the sub-pixels in the left column are the same value (column 5, line 63 to column 6, line 4 of Karlsson). Then, after all the sub-pixels of the left column have attained the same color, the growth progression repeats, but with the next grayscale level (column 6, lines 5-11 of Karlsson). Therefore, the sub-pixel level difference has been set to one. Since figures 5-7 of Karlsson are merely exemplary and any configuration and pixel growth can be defined (column 8, lines 52-62 of Karlsson), it would be obvious to one of ordinary skill in the art to apply the growth pattern of the left column of the supercell to the entire supercell. In other words, the progression would occur such that every sub-pixel in the supercell is the same grayscale value before a sub-pixel is set to the next grayscale value.

Hanyu in view of Sano is combinable with Karlsson because they are from the same field of endeavor, namely halftone data

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image processing and halftone screen production. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the dot growth pattern taught by Karlsson to the second-generation halftone method taught by Hanyu in view of Sano. The motivation for doing so would have been to reduce image artifacts (column 3, lines 12-16 of Karlsson). Therefore, it would have been obvious to combine Karlsson with Hanyu in view of Sano to obtain the invention as specified in claim 8.

Regarding claim 13: Hanyu discloses selecting an image which has been halftoned by forming original halftone dots (figure 5A and column 8, lines 25-29 of Hanyu), wherein each halftone dot includes at least one pixel therefor (column 7, lines 46-49 and column 8, lines 29-34 of Hanyu); determining a number of tone levels required for each pixel of the selected halftoned image (column 9, lines 36-41 and lines 51-57 of Hanyu); organizing the number of tone levels (figures 6A-6D and column 9, lines 17-35 of Hanyu); and identifying a high-frequency halftone cell size (column 9, lines 20-34 of Hanyu). By organizing the dots for the second halftone operation into 1x1, 2x2, 2x4, 3x3 or 3x6 cells, the high-frequency halftone cell size is identified. The high-frequency halftone cell size is the cell size specifically selected based on the desired magnification.

Hanyu further discloses scanning the selected halftoned image (column 7, lines 30-35 and column 11, lines 24-30 of Hanyu) to produce a second generation halftoned image, which retains the original halftone dots and pixels therein (figure 12 (8) and column 9, lines 51-67 of Hanyu). Reading the image with a fax machine to produce the initial two-toned (also know as

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halftoned) image requires scanning the image. The original halftone image is used to produce a second generation halftoned image in the system receiving the scanned halftoned image (figure 12(8) and column 9, lines 51-67 of Hanyu).

Hanyu further discloses reproducing, for each pixel in the second generation halftoned image, a pixel tone level by setting multi-level thresholds (column 9, lines 60-67 of Hanyu); and selecting, from the set of tone levels, a tone closest to the pixel tone level of each pixel in the second generation halftoned image to minimize noise (column 9, lines 60-67 of Hanyu).

Hanyu does not disclose expressly arranging the number of tone levels in a set of tone levels; that said selection of a tone is performed such that the noise generated during scanning is minimized and without constructing a new halftone center; arranging a dot growth pattern to offset initial dot growth from the center of the halftone cell by defining sub-cells and growing the dot pattern relative to the sub-cell; determining a sub-pixel level difference; and growing a dot pattern evenly across the second generation by setting the sub-pixel level difference to one while preserving dot original amplitude.

Sano discloses arranging the number of tone levels in a set of tone levels (figure 9 and column 5, lines 29-36 of Sano); selecting a tone such that the noise generated during scanning is minimized (figure 14 and column 8, lines 4-8 of Sano) and without constructing a new halftone center (column 7, line 60 to column 8, line 4 of Sano); and arranging a dot growth pattern to offset initial dot growth from the center of the halftone cell by defining sub-cells (figure 14(HC0-HC4) of Sano) and growing

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the dot pattern relative to the sub-cell (column 7, line 60 to column 8, line 4 of Sano).

Hanyu is analogous art since Hanyu is from the same field of endeavor as the present application, namely converting half-tone data to multi-tone data without descreening. Hanyu and Sano are combinable because they are from the same field of endeavor, namely halftone processing of image data so as to minimize halftone processing artifacts. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the halftone screen production and threshold selection processing taught by Sano to produce the halftone screen used for multi-tone image production in the system taught by Hanyu. The motivation for doing so would have been eliminate unevenness in the resultant multi-tone image (column 2, lines 20-22 of Sano). Therefore, it would have been obvious to combine Sano with Hanyu.

Hanyu in view of Sano does not disclose expressly determining a sub-pixel level difference; and growing a dot pattern evenly across the second generation by setting the sub-pixel level difference to one while preserving dot original amplitude.

Karlsson discloses determining a sub-pixel level difference (figure 5 and column 5, line 60 to column 6, line 1 of Karlsson); and growing the dot pattern evenly across the image by setting the sub-pixel level difference to one while preserving dot original amplitude (figure 5; column 6, lines 5-11; and column 8, lines 52-62 of Karlsson). Karlsson teaches that the supercell array (figure 5(500) of Karlsson) can be configured in any desired manner and the order of growth can occur in any desired progression of stages (column 8, lines 52-62 of Karlsson). In the example of figure 5 of Karlsson, the

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order of growth progresses such that, in the left column, each sub-pixel is increased by one grayscale value until all the sub-pixels in the left column are the same value (column 5, line 63 to column 6, line 4 of Karlsson). Then, after all the sub-pixels of the left column have attained the same color, the growth progression repeats, but with the next grayscale level (column 6, lines 5-11 of Karlsson). Therefore, the sub-pixel level difference has been set to one. Since figures 5-7 of Karlsson are merely exemplary and any configuration and pixel growth can be defined (column 8, lines 52-62 of Karlsson), it would be obvious to one of ordinary skill in the art to apply the growth pattern of the left column of the supercell to the entire supercell. In other words, the progression would occur such that every sub-pixel in the supercell is the same grayscale value before a sub-pixel is set to the next grayscale value.

Hanyu in view of Sano is combinable with Karlsson because they are from the same field of endeavor, namely halftone data image processing and halftone screen production. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the dot growth pattern taught by Karlsson to the second-generation halftone method taught by Hanyu in view of Sano. The motivation for doing so would have been to reduce image artifacts (column 3, lines 12-16 of Karlsson). Therefore, it would have been obvious to combine Karlsson with Hanyu in view of Sano to obtain the invention as specified in claim 13.

Further regarding claims 4, 11 and 16: Karlsson discloses that said defining a sub-cell includes defining a cell to be a 4x4 pixel matrix (figure 10 and column 8, lines 35-38 of Karlsson). Karlsson further teaches defining a supercell

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(figure 9 of Karlsson) comprising four separate sub-cells as a 2D matrix (column 8, lines 25-32 of Karlsson), having a sub-pixel level difference matrix value for each pixel in the cell and sub-cell (column 8, lines 28-34 of Karlsson). Distributing the elements in the classes (column 8, lines 28-34 of Karlsson) determines how the dot pattern is grown (column 5, lines 10-17 of Karlsson). Splitting the supercell into four sub-cells (figure 9 and column 8, lines 25-29 of Karlsson) will result in four sub-cells of 2x2 pixels if performed on the supercell in the example of figure 10 of Karlsson). Further, since the supercell can be configured in any desired manner (column 8, lines 60-62 of Karlsson), the order of each of the sub-cells of figure 10 of Karlsson can be modified such that each 2x2 pixel sub-cell contains 0_x , 1_x , 2_x and 3_x , where 'x' is the integer denoting the order for the particular pixel.

Regarding claims 5, 12 and 17: Hanyu discloses that said arranging includes scaling up the matrix values from zero to one, to zero to 255 (column 9, lines 51-53 and column 10, lines 1-7 of Hanyu). The scaling up (also known as "magnification" in Hanyu) operations specifically shown are simply demonstrative. If the halftone data is magnified such that there are 16x16 dots for each initial halftone dot, then the scaling up of the matrix values is from zero to one, to zero to 255.

Regarding claims 6, 9 and 14: Hanyu discloses that the number of tone levels is fifteen levels of gray plus white (column 9, lines 51-53 and column 10, lines 1-7 of Hanyu). The scaling up (also known as "magnification" in Hanyu) operations specifically shown are simply demonstrative. If the halftone data is magnified such that there are 4x4 dots for each pixel,

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then the number of tone levels is fifteen levels of gray plus white.

Further regarding claims 7, 10 and 15: Karlsson discloses that the cell size is 4x4 pixels (figure 1 and column 4, lines 28-34 of Karlsson).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Loce et al., US Patent 5,387,985, Patented 07 February 1995, Filed 17 December 1993.

b. Nobutaka Miyake, US Patent 5,875,268, Patented 23 February 1999, Filed 31 January 1997.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



03 January 2006

James A. Thompson
Examiner
Art Unit 2624



THOMAS D.
JAN 10 2006